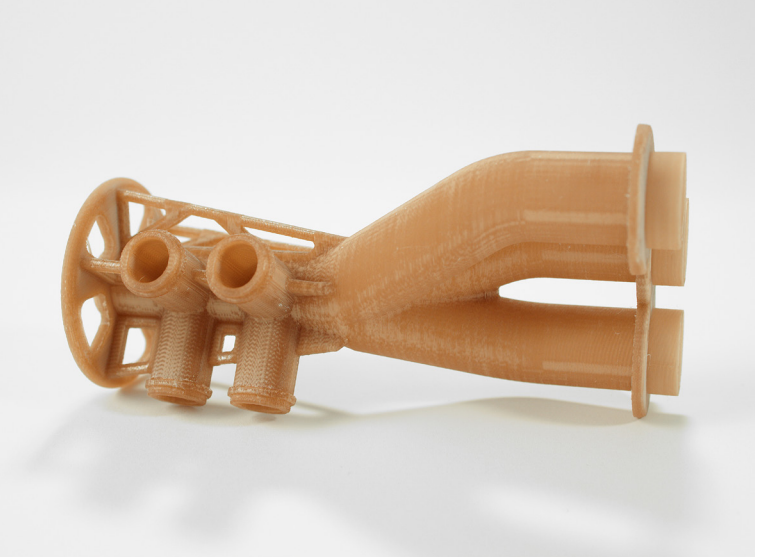

laserlines
01295 672500
3dworld@laserlines.co.uk
www.3dprinting.co.uk

VICTREX AM™ 200

Part Numbers

Filament Canisters

355-70030	Victrex AM 200 Model Material, 92.3 cu. in. - Plus
355-03120	SR-100 Soluble Support, 92.3 cu. in. - Plus

Printer Consumables

511-10350	T14E tip
511-10100	T12SR-100 tip
325-00275-S	High temperature build sheet, 0.02 x 16 x 18.5 in. (0.51 x 406 x 470 mm)

Machine is a Fortus 450mc with hardened components.

Description of AM 200

Victrex AM 200 is a high-performance, low melt PAEK (polyarletherketone) designed specifically for additive manufacturing. It offers performance capabilities like PEEK and PEKK but without the challenges associated with 3D printing those materials.

Key Attributes

- High temperature material with soluble support
- A PEEK-based copolymer filament produced using Victrex's LMPAEK™ polymer technology
- Excellent chemical resistance and use temperature
- High-performance strength
- Flame, smoke, and toxicity (FST) capabilities, such as the ability to meet FAR 25.853
- Low outgassing
- Slice heights: 10

Primary Application

- Aerospace
- Oil and gas

Challenges customers have with current solutions

- Long lead times
- Limited ability to prototype, iterate, or improve parts
- Other materials do not have same material properties and are not known within targeted industries.

Benefits of Victrex AM 200 on the Fortus 450mc™

- Design flexibility: A high temperature material that is paired with a soluble support
- Crystallinity post-annealing: printing amorphous allows the use of soluble support but annealing allows the parts to gain stiffness above the as-printed material stiffness.

Printing Challenges and Tips

Victrex AM 200 is a Stratasys Validated Material. Validated materials are developed by Stratasys or a third-party provider, meet Stratasys quality standards, and have received basic reliability testing for use with Stratasys FDM printers. They also undergo a less extensive tuning and testing process than a Stratasys Preferred Material. More extensive tuning would help compensate for difficult printing geometries or conditions. To better prepare the user for what the build experience may include, this section outlines tips and known difficulties with this material.

- Use Sparse supports.
- Depending on the geometry, Victrex AM 200 prints in both the amorphous and crystalline state which results in color variance throughout the part. Areas that cool more quickly tend to be more amorphous. Areas that remain hot longer tend to be more crystalline. The crystalline areas appear lighter in color than the amorphous area, creating the color gradients within the part.
- This material is prone to curling, which is partially due to the crystallinity of the material. The crystallization can also cause sink on some geometries.
- When printing holes, poor seams may be noted on the interior seams. If needed, the hole can be cleaned up with a hand tool following the build.
- When the first layer of the part consists of short toolpaths (i.e., several small towers), the model material does not adhere cleanly to the support material. For this scenario, the geometry can be modified to create a larger base for the first layer and the extra material can be removed after building the part.
- There may be higher build-to-build mechanical variation due to the crystallinity. For example, a higher coefficient of variance (COV) was observed with tensile testing for tensile strength at break, where the COV was 7% for the ZX orientation and above 20% in the XZ orientation.
- The model tip life is set to 368 in^3. For a validated material, the tip life was tested to 185 in^3 and from prior experience with similar materials, the tip is anticipated, but not guaranteed, to print well until the tip life is expired.

stratasys